



## Complete Summary

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### TITLE

Assessment and prevention of thrombotic and ischemic complications in patients undergoing procedures with pneumatic tourniquet: percentage of surgical procedures in which pneumatic tourniquet pressure and time of inflation are recorded.

### SOURCE(S)

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to determine the percentage of surgical procedures in which pneumatic tourniquet cuff pressure and time of inflation are recorded.

### RATIONALE

Ischemic neuromuscular injury may occur if the pneumatic tourniquet remains inflated too long. Direct pressure injury to nerves may also occur. Additionally, tourniquet inflation and deflation may depress the cardiorespiratory function in the perioperative period, including causing "showers" of embolic debris to the heart, which may in turn cause pulmonary embolism.

Main aim of indicator: to increase the percentage of surgical procedures in which pneumatic tourniquet pressure and time of inflation are controlled.

#### **PRIMARY CLINICAL COMPONENT**

Pneumatic tourniquet pressure and time of inflation recording

#### **DENOMINATOR DESCRIPTION**

Number of patients undergoing surgical procedures with pneumatic tourniquet-induced ischemia

#### **NUMERATOR DESCRIPTION**

Number of procedures in which pneumatic tourniquet time and pressure are recorded x 100

### **Evidence Supporting the Measure**

#### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

### **Evidence Supporting Need for the Measure**

#### **NEED FOR THE MEASURE**

Overall poor quality for the performance measured  
Variation in quality for the performance measured

#### **EVIDENCE SUPPORTING NEED FOR THE MEASURE**

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

### **State of Use of the Measure**

#### **STATE OF USE**

Current routine use

#### **CURRENT USE**

Internal quality improvement

### Application of Measure in its Current Use

#### **CARE SETTING**

Hospitals

#### **PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Advanced Practice Nurses  
Nurses  
Physicians

#### **LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Single Health Care Delivery Organizations

#### **TARGET POPULATION AGE**

Unspecified

#### **TARGET POPULATION GENDER**

Either male or female

#### **STRATIFICATION BY VULNERABLE POPULATIONS**

Unspecified

### Characteristics of the Primary Clinical Component

#### **INCIDENCE/PREVALENCE**

Pressure and time of inflation are recorded in  $4.2\% \pm 0.3$  (95% Confidence Interval) of surgical procedures in which pneumatic tourniquet is used.

#### **EVIDENCE FOR INCIDENCE/PREVALENCE**

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

#### **ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

#### **BURDEN OF ILLNESS**

See the "Rationale" field.

#### **UTILIZATION**

Unspecified

#### **COSTS**

Unspecified

### **Institute of Medicine National Healthcare Quality Report Categories**

#### **IOM CARE NEED**

Getting Better

#### **IOM DOMAIN**

Effectiveness  
Safety

### **Data Collection for the Measure**

#### **CASE FINDING**

Users of care only

#### **DESCRIPTION OF CASE FINDING**

Patients undergoing surgical procedures with pneumatic tourniquet-induced ischemia

#### **DENOMINATOR SAMPLING FRAME**

Patients associated with provider

#### **DENOMINATOR INCLUSIONS/EXCLUSIONS**

##### **Inclusions**

Number of patients undergoing surgical procedures with pneumatic tourniquet-induced ischemia

##### **Exclusions**

None

#### **RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

**DENOMINATOR (INDEX) EVENT**

Therapeutic Intervention

**DENOMINATOR TIME WINDOW**

Time window is a single point in time

**NUMERATOR INCLUSIONS/EXCLUSIONS****Inclusions**

Number of procedures in which pneumatic tourniquet time and pressure are recorded x 100

**Exclusions**

None

**MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

**NUMERATOR TIME WINDOW**

Encounter or point in time

**DATA SOURCE**

Administrative data  
Medical record

**LEVEL OF DETERMINATION OF QUALITY**

Individual Case

**PRE-EXISTING INSTRUMENT USED**

None

**Computation of the Measure****SCORING**

Rate

**INTERPRETATION OF SCORE**

Better quality is associated with a higher score

## **ALLOWANCE FOR PATIENT FACTORS**

Unspecified

## **STANDARD OF COMPARISON**

Internal time comparison

# **Evaluation of Measure Properties**

## **EXTENT OF MEASURE TESTING**

After pilot testing, the set of indicators has been measured in a random sample of 25 Spanish hospitals, stratified by hospital size. The main objective has been to field test the feasibility of measurement in the various settings representing real life situations in the context of the Spanish Health Care System.

Both the whole indicators validation report and the results of the baseline measurement in a sample of the Spanish National Health Service (NHS) hospitals may be accessed and downloaded from the Spanish Ministry of Health web page (in Spanish):

- [Validation report](#)
- [Results of baseline measurement in Spanish NHS hospitals](#)

## **EVIDENCE FOR RELIABILITY/VALIDITY TESTING**

Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p.

Ministerio de Sanidad y Consumo. Indicadores de buenas prácticas sobre seguridad del paciente. Resultados de su medición en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

# **Identifying Information**

## **ORIGINAL TITLE**

Percentage of surgical procedures in which pneumatic tourniquet pressure and time of inflation are recorded.

**MEASURE COLLECTION**

[Safe Practices Indicators Project](#)

**MEASURE SET NAME**

[Adopting Safe Practices in Specific Clinical Care Settings or for Specific Processes of Care](#)

**MEASURE SUBSET NAME**

[Prevention of Ischemic and/or Thrombotic Complications Associated to the Use of Pneumatic Tourniquet](#)

**SUBMITTER**

Spanish Agency for Healthcare Quality of the Spanish Ministry of Health

**DEVELOPER**

Grupo de Investigación sobre Gestión de la Calidad en Servicios de Salud, University of Murcia, under contract to the Spanish Ministry of Health

**FUNDING SOURCE(S)**

Agency for Quality, Spanish Ministry of Health

**COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE**

Saturno, Pedro J., MD, DrPH; Group Director and Project PI

Castillo, Carmen; López, M. José; Ramón, Teresa; Nurses

Carrillo, Andrés, MD; Intensive Care Specialist

Iranzo, M. Dolores; Hospital pharmacist

Soria, Victor, MD; Surgeon

Parra, Pedro, MD; Gomis, Rafael, MD; Gascón, Juan J., MD; Quality Management Specialists

**FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

Project entirely financed by the Spanish Ministry of Health.

**ADAPTATION**

Measure was not adapted from another source.

**RELEASE DATE**

2009 Feb

**MEASURE STATUS**

This is the current release of the measure.

**SOURCE(S)**

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

**MEASURE AVAILABILITY**

The individual measure, "Percentage of Surgical Procedures in Which Pneumatic Tourniquet Pressure and Time of Inflation are Recorded," is published in "Safe Practices Indicators Project: Background, Summary of Methods and Measurement Strategies."

For more information, contact:

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OR
- Pedro J. Saturno, Facultad de Medicina, Universidad de Murcia, 30100 Espinardo-Murcia (Spain); Phone: 868 883 948; Fax: +34 868 883947; E-mail: [psaturno@um.es](mailto:psaturno@um.es); Web site: <http://www.calidadsalud.com>.

**COMPANION DOCUMENTS**

The following are available:

- Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p. This document is available in Portable Document Format (PDF) from the [Ministry of Health and Social Policy Web site](http://www.msc.es/en/home.htm) (in Spanish).
- Ministerio de Sanidad y Consumo. Indicadores de buenas prácticas sobre seguridad del paciente. Resultados de su medición en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p. This document is available in PDF from the [Ministry of Health and Social Policy Web site](http://www.msc.es/en/home.htm) (in Spanish).

**NQMC STATUS**

This NQMC summary was completed by ECRI Institute on September 11, 2009. The information was verified by the measure developer on December 23, 2009.



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